

An observational test for coronal heating models

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We study the evolution of the emissivity and heating correlated with magnetic observables of an active region from its birth throughout its decay during seven solar rotations (July-Dec. 1996). Taking one "snapshot" per rotation at each consecutive central meridian passage of the AR, outside the time of flares, we analyse multi-wavelength and multi-instrument data obtained from SOHO (MDI, EIT, CDS and SUMER), Yohkoh (SXT), GOES, SOLSTICE and 10.7 cm radio data from DRAO, Canada. We utilise our results to test the validity of coronal heating models. We find that models which are based on the dissipation of stressed, current-carrying magnetic fields are in better agreement with the observations than the models which attribute coronal heating to the dissipation of MHD waves.